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EXAMINER

LE, HOA T

ART UNIT

PAPER NUMBER

1773

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/642,779

Applicant(s)

JAMES ET AL.

Examiner

H. T. Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 17-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 17-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

2. Claims 1, 3-14 and 17-19 are rejected under 35 U.S.C. 112, first paragraph, because the specification as disclosed required that the refractive index relationship between the components in the claimed article be $n_{\text{shell}} < n_{\text{plastic host}} < n_{\text{core}}$ for the claimed optical plastic article to acquire adequate optical properties. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

In the specification, particularly at page 7, lines 5-9 and page 13, lines 17-19, it is clearly stated that, the indices of refraction of the materials should follow “the rule” that:

$n_{\text{shell}} < n_{\text{plastic host}} < n_{\text{core}}$ in order to “reduce the haze of nanocomposite material”. Thus, it appears that the relationship $n_{\text{shell}} < n_{\text{plastic host}} < n_{\text{core}}$ is critical to the claimed invention.

Consequently, claim 1, which fails to include the relationship in refractive index between the plastic host ($n_{\text{plastic host}}$) and the core (n_{core}), is deemed broader than the enabling scope of the disclosure. Claims 3-14 and 17-19 are rejected for the same non-enablement reason.

3. Claims 18 and 19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the

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claimed invention. There is no support in the original specification for the value of haze as recited in claim 18 and value of dn/dT recited in claim 19.

4. Claims 2, 9-12, 17 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, it is suggested that “wherein” be added before “the optical vector” (line 8) for clarify and to obviate grammatical error.

Claim 9 is confusing. A shell material forms a ‘coating layer’ not ‘coated layer’. In addition, as already pointed out in the last office action, “low” in “low refractive index” renders the claim indefinite. See the reason in the last office action.

Claims 10 and 11, “coated layer” should be “coating layer”.

Claim 12, “coated shell” should be just “shell” or “shell coating”.

In claim 17, it’s unclear what is the loading component of the claimed “volume loading”. Is it the loading of the particulate material or of the host?

In claim 19, the terms, dn , dT and E are not defined. Thus the claim is indefinite. In addition, the value as claimed, $-80E-6/C$ is queried.

Double Patenting

5. Claims 1 and 3 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,586,096 as applied in the last office action and further discussed below.

Applicants stated that “[a]pplicants herewith file a terminal disclaimer in compliance with 27 CFR 1.32 1(c) to overcome a double patenting rejection based on a nonstatutory double patenting ground.” However, no terminal disclaimer has been filed.

Claim Rejections - 35 USC § 103

6. Claims 1, 3-14 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Border ‘096 (US 6,586,096).

Claim 1: The Border ‘096 patent teaches an optical nanocomposite article comprising a plastic host material and a nanoparticulate material having the same temperature sensitive optical vector relationship as claimed in the instant claims. See col. 3, lines 33-42. The plastic host is not limited to just polymethylmethacrylate; other plastic materials as the plastic host are discussed at col. 7, lines 60-64. The nanoparticulate material is coated (col. 7, lines 31-35); therefore, the nanoparticle is a core-shell particle. The Border ‘096 does not teach the relationship of the refractive index between components of the articles (i.e. the host, the core and the shell material); however, it would have been obvious for one ordinary skill in the art that the coating material must not interfere with the optical properties of the articles. Therefore, the coating material must have a refractive index smaller than that of the core or the plastic host material in order to avoid interfering with the optical properties of the article.

Claims 3 and 4: See Border ‘096 patent, claim 1.

Claim 5: See Tables 2 and 3 (col. 5 and 6).

Claims 6-8: See col. 8, lines 29-30 and col. 9, lines 40-41 and 63-64.

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Claim 9: it would have been obvious to utilize low refractive index material as the shell material to avoid interfering with the transparency of the optical article.

Claims 10-14: Selecting the material suitable as the shell material would have been obvious to one having ordinary skill in the art in so far as they promotes dispersion as taught in the Border '096 patent and do not interfere with the optical properties of the article. Further, determining the thickness corresponding to the shell material would also been obvious to one having ordinary skill in the art through routine experimentation.

Claims 17-19: The volume loading (claim 17), the haze value (claim 18) and dn/DT value (claim 19) of the article taught in the Border '096 patent are expected to be within the same range as claimed because the article taught by the Border '086 patent comprises the same components as the claimed article (as discussed in the rejection to claim 1 above).

Allowable Subject Matter

7. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claim 2 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

9. Applicant did not make any arguments regarding to the 35 USC 103 rejection applied to claim 1 as set forth in the last office action. Therefore, it is assumed that Applicant agreed with the examiner's rejection. The 35 USC 103 rejection has been extended beyond claim 1 to other claims as set forth above in view of the amendment to claims.

10. Applicants stated that "[a]pplicants herewith file a terminal disclaimer in compliance with 27 CFR 1.32 1(c) to overcome a double patenting rejection based on a nonstatutory double patenting ground." However, no terminal disclaimer has been filed. Therefore, the rejection to the double patent rejection is hereby maintained.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

12. References not relied upon are considered pertinent to the claimed invention.

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to H. T. Le whose telephone number is 571-272-1511. The examiner can normally be reached on 10:00 a.m. to 6:30 p.m., Mondays to Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on 571-272-1284. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



H. T. Le
Primary Examiner
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